

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) An electromagnetic driving device comprising;
a movable core,

a stator having a housing portion for housing said movable core in such a manner as to move in a reciprocating fashion therein, and an attracting portion, a magnetic force being generated between said attracting portion and said movable core for attracting said movable core to move in one reciprocating movement direction and cooperating with said movable core to form a magnetic circuit,

a coil for generating a magnetic force which attracts said movable core to said attracting portion side when energized, and

a non-magnetic layer formed on at least one of sides where said housing portion and said movable core are situated, respectively, to diametrically face each other,

and wherein an eccentricity R defined as $(d_1/d_0) \times 100$ is set so as to satisfy $20\% \leq R \leq 60\%$, where d_0 is a magnetic gap which is formed in a radial direction between the housing portion and the movable core, excluding the non-magnetic layer, and d_1 is an air gap which is formed in a radial direction between the facing surfaces of the housing portion and the movable core, including the non-magnetic layer, when the movable core does not deviate from, but remains coaxial with, the housing portion,

wherein a first non-magnetic layer is formed on an inner circumferential wall of the housing portion and a second non-magnetic layer is formed on an outer circumferential wall of the movable core, said air gap being formed in a radial direction between said first and second non-magnetic layers and said magnetic gap being formed between magnetic materials of the housing portion and the movable core.

Claims 2 - 7 (canceled).

8. (previously presented) An electromagnetic driving device as set forth in claim 1, wherein a thin portion is formed between the housing portion and the attracting portion, said thin portion defining a magnetic resistance portion for reducing a leakage of magnetic flux between the housing portion and the attracting portion.

Claim 9. (canceled).

10. (currently amended) An electromagnetic driving device as set forth in claim 1, wherein said non-magnetic ~~layer~~ layers comprises ~~a layer~~ layers selected from the group consisting of a teflon coating, a coating comprising a combination of polyamide and teflon, a coating comprising a combination of polyamide and molybdenum disulfide, and NiP plating.

11. (previously presented) An electromagnetic driving device as set forth in claim 1, wherein if said first non-magnetic layer has a thickness t_0 and the second non-magnetic layer has a thickness t_1 , the thicknesses are set so as to satisfy $40\mu\text{m} \leq t_0 + t_1 \leq 80\mu\text{m}$.

12. (previously presented) An electromagnetic driving device as set forth in claim 1, wherein any of said attracting portion, said housing portion and said plunger portion becomes saturated magnetically when the value of electric current that is supplied to said coil increases to reach a predetermined value which falls between 40% or larger and 60% or smaller of a maximum value of electric current that is supplied to said coil.

Claims 13-15. (canceled).